

App. No. 10/624,090
Amendment Dated February 4, 2005
Reply to Office Action of October 4, 2004.

In the Claims

1. (Cancelled)

2. (Original) The method of claim 4 ~~1~~, further comprising updating a configuration of said one or more network elements based at least in part on said configuration information.

3. (Original) The method of claim 4 ~~1~~, further comprising selecting, prior to automatically generating configuration information, said one or more network elements for which said configuration information is to be generated.

4. (Amended) A method, comprising:

receiving a profile specifying a quality of service (QoS) treatment for packets for at least one application in one or more packet networks; and

automatically generating configuration information for one or more network elements of said one or more packet networks for treatment of the packets for the at least one application according to said specified QoS treatment

~~The method of claim 1, further comprising automatically generating at least one traffic descriptor for said application based at least in part on said profile.~~

5. (Original) The method of claim 4, wherein the configuration information includes at least one generic access list automatically generated based at least in part on said at least one traffic descriptor.

6. (Amended) The method of claim 4 ~~1~~, further comprising generating a generic access list for each of said at least one applications.

7. (Amended) The method of claim 4 ~~1~~, further comprising generating a generic access list for each of said at least one applications, each of said generic access lists comprising:

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at least one clause comprising one or more network criteria; and

at least one match rule specifying whether said one or more packets matching said one or more network criteria are to be permitted or denied.

8. (Original) The method of claim 7, wherein said one or more network criteria is selected from the group consisting of a protocol, a source address, a destination address, a source port, a destination port, an Internet Protocol precedence value and an Internet Protocol type of service value.

9. (Original) The method of claim 4, further comprising generating at least one access list from said at least one traffic descriptor, said at least one access list being independent of a type of said one or more network elements.

10. (Original) The method of claim 5, further comprising generating a corresponding network element specific access list for each of said at least one generic access lists.

11. (Original) The method of claim 10, further comprising updating a configuration of said one or more network elements based at least in part on said network element specific access list.

12. (Amended) The method of claim 4 ~~4~~, wherein said receiving step comprises receiving a service plane selection for said at least one application, said service plane specifying at least said quality of service treatment.

13. (Original) The method of claim 12, wherein said service plane selection is selected from the group consisting of a normal service plane, a low priority data service plane, a medium priority data service plane, a high priority data service plane, a reserved bandwidth service plane, a video service plane, and a voice service plane.

14. (Original) The method of claim 12, further comprising assigning a priority to said at least one application based at least in part on said service plane selection.

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15. Cancelled.

16. (Amended) The method of claim 4 ~~1~~, wherein said profile comprises at least one combination rule.

17. (Amended) The method of claim 4 ~~1~~, wherein said profile comprises at least one combination rule specifying that network traffic that meets all of a plurality of criteria be accepted.

18. (Amended) The method of claim 4 ~~1~~, wherein said profile comprises at least one combination rule specifying that network traffic that meets at least one of a plurality of criteria be accepted.

19. (Amended) The method of claim 4 ~~1~~, wherein said profile comprises at least one combination rule specifying that network traffic that meets none of a plurality of criteria be accepted.

20. (Original) The method of claim 4, wherein said automatically generating said at least one traffic descriptor comprises:

translating said profile for each of said at least one user applications into a corresponding traffic descriptor; and

combining said traffic descriptors according to at least one combination rule.

21. (Original) The method of claim 4, wherein said automatically generating said at least one traffic descriptor comprises translating at least one simple application descriptor into a conjunction of a plurality of components of said at least one simple application descriptor.

22. (Original) The method of claim 21, wherein one or more of said plurality of components are selected from the group consisting of a protocol, a source address, a destination address, a source port, a destination port, an Internet Protocol precedence value and an Internet Protocol type of service value.

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23. Cancelled.

24. Cancelled.

25. (New) A programmable device storing instructions that, when read by the programmable device, cause the programmable device to perform a method comprising:

generating from one or more traffic descriptors non-Boolean configuration information for a network element, the one or more traffic descriptors describing packetized traffic to be transmitted over a packet network using at least in part Boolean expressions on primitive network predicates;

causing configuration of the network element using the non-Boolean, configuration information.

26. (New) The programmable device of claim 25, wherein the primitive network predicates include one or more of the following: transmission protocol, source address, destination address, source ports, destination ports, precedence value, and type of service.

27. (New) The programmable device of claim 25, wherein the method further comprises converting an application profile to the one or more the one or more traffic descriptors, the application profile indicating a quality of service treatment for packets originated by an application.

28. (New) The programmable device of claim 27, wherein the application profile is received from a customer running the application, the customer transmitting traffic from the application to an edge device on a network, of which the network element is a part.

29. (New) The programmable device of claim 27, wherein the method further comprises generating for each of a plurality of application profiles one or more traffic descriptors and combining the one or more traffic descriptors of each application into merged traffic descriptors, from which the configuration information is generated.

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30. (New) The programmable device of claim 29, wherein the plurality of applications are associated with a single service plan on a network, to which the network element belongs.

31. (New) The programmable device of claim 25, wherein the configuration information includes an access list.

32. (New) The programmable device of claim 31, wherein the method further comprises translating the generic access list into a device-specific access list.

33. (New) The programmable device of claim 32, further comprising generating policy commands for assigning priorities to the device-specific access list.

34. (New) A method for generating configuration information, comprising:

generating from an application profile one or more traffic descriptors, the application profile containing a high-level description of treatment of packets originating from the application for transmission over a network, the one or more traffic descriptors describing the packets using at least in part Boolean expressions on primitive network predicates; and

generating from the one or more traffic descriptors non-Boolean, configuration information for a network element.

35. (New) The method of claim 34 further comprising generating for each of a plurality of application profiles one or more traffic descriptors and combining the one or more traffic descriptors of each application into merged traffic descriptors, from which the configuration information is generated.

36. (New) The method of claim 34, wherein the configuration information includes an access list.

37. (New) The method of claim 36, further comprising translating the generic access list into a device-specific access list.

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38. (New) The programmable device of claim 39, further comprising generating policy commands for assigning priorities to the device-specific access list.

39. (New) The method of claim 35, wherein the application profile is received from a customer running the application, the customer transmitting traffic from the application to an edge device on a network, of which the network element is a part.

40. (New) The programmable device of claim 25, wherein the primitive network predicates include one or more of the following: transmission protocol, source address, destination address, source ports, destination ports, precedence value, and type of service

41. (New) A network comprising a plurality of configurable network elements and at least one programmable device, the programmable device being programmed to perform a method comprising:

generating from one or more traffic descriptors non-Boolean configuration information for a network element, the one or more traffic descriptors describing packetized traffic to be transmitted over a packet network using at least in part Boolean expressions on primitive network predicates; and

causing configuration of at least one of the plurality of network elements using the non-Boolean, configuration information.

42. (New) The network of claim 41, wherein the primitive network predicates include one or more of the following: transmission protocol, source address, destination address, source ports, destination ports, precedence value, and type of service.

43. (New) The network of claim 41, wherein the method further comprises converting an application profile to the one or more the one or more traffic descriptors, the application profile indicating a quality of service treatment for packets originated by an application.